



Tucson Area GIS Cooperative Meeting  
11 April 2014



data & metadata



document sharing



security & access



web services



redundant hardware



software & databases

**241** days  
since  
going  
live

**971** screened and  
approved users

**237** different agencies  
and organizations

**157** contributed services  
and datasets

**20** organized and secure  
user-groups

**18** services

**139** datasets

# What is AZGEO?



- AZGEO is an initiative of the Arizona Geographic Information Council (AGIC) designed to provide GIS users with links to Internet map services, FGDC-compliant metadata, and geospatial data downloads
- Intentions:
  - Connect existing data silos and provide tools for better decision-making
  - Facilitate data sharing
  - Decrease redundant development of the same data
  - Shorten the time required to obtain critical information
  - Reduce costs
  - Leverage existing investments in Arizona GIS

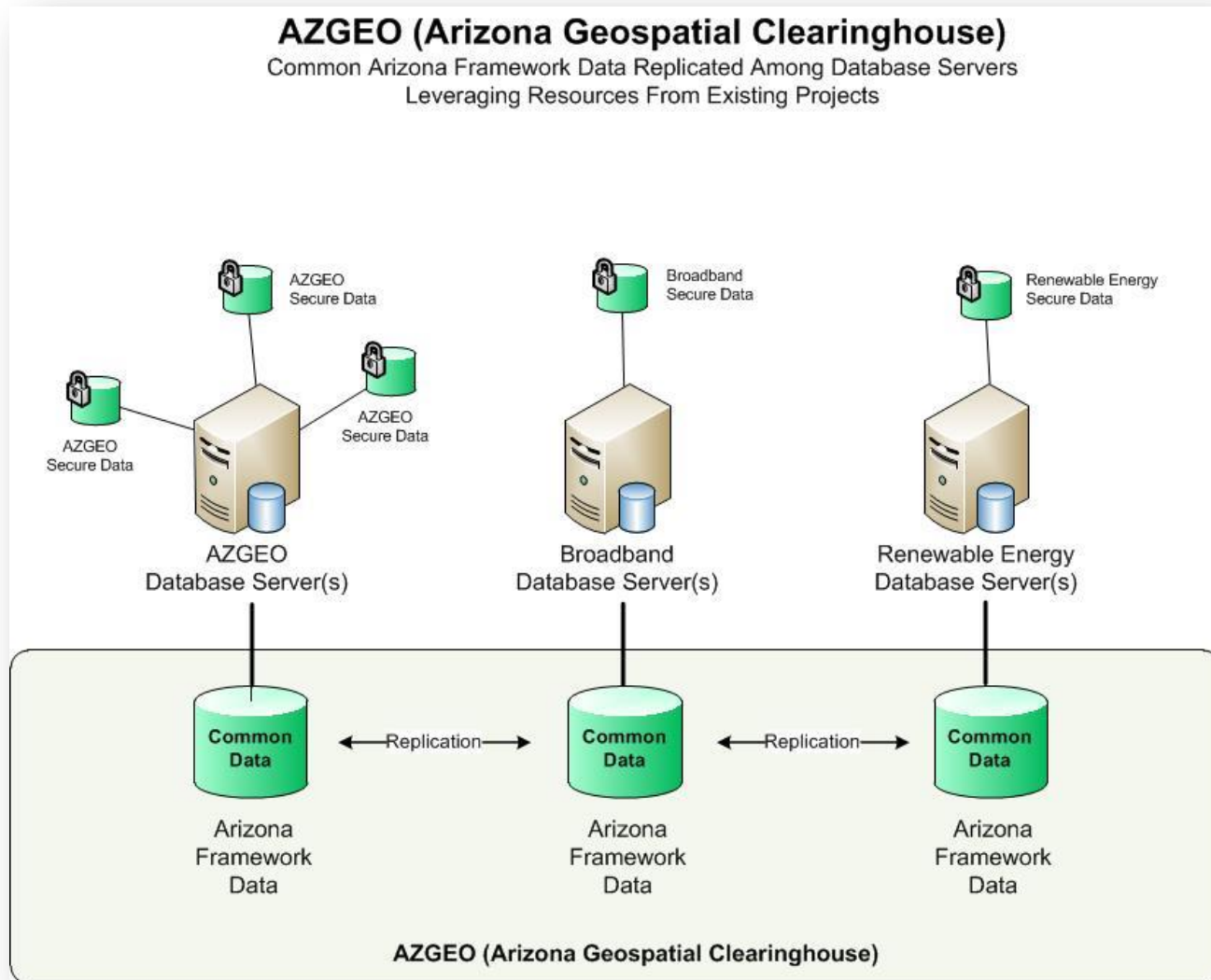
# Background

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- Design
  - Developed as a replacement for the AGIC Portal
  - Designed from the ground up to be secure and useful for a wide variety of projects
- Statutes (ARS § 37-171 o 178)
  - Establish Enterprise GIS
  - Facilitate data sharing
  - Establish Geospatial Clearinghouse (AZGEO)
- Development Partners
  - Arizona Geographic Information Council (AGIC)
  - State Cartographer's Office (SCO)
  - ASU's Institute for Social Science Research (ISSR)
  - Arizona State Land Department (ASLD)
- Funding
  - Leverages existing resources
  - Supporting projects

# Leveraging Existing Resources



# Business Drivers, Supporting Projects



- Support for AGIC State Agencies, projects, and programs
- Focus on public safety
  - Arizona 9-1-1 Community/Next Generation 9-1-1
  - Arizona All Roads Network (MAP21 and ARNOLD)
  - FirstNet
  - AcTIC
- Natural Resources Review Council (NRRC)
- Other programs and projects to be identified

# What does AZGEO offer?



- Geospatial data sharing platform for Arizona
- Original datasets and geospatial services
- Customizable security, enhanced access control
- Search and discovery for your data and services
- Analytics & statistics to increase ROI on your data
- Subscription & notification services for when data is altered or updated
- Scalable and redundant servers and backups

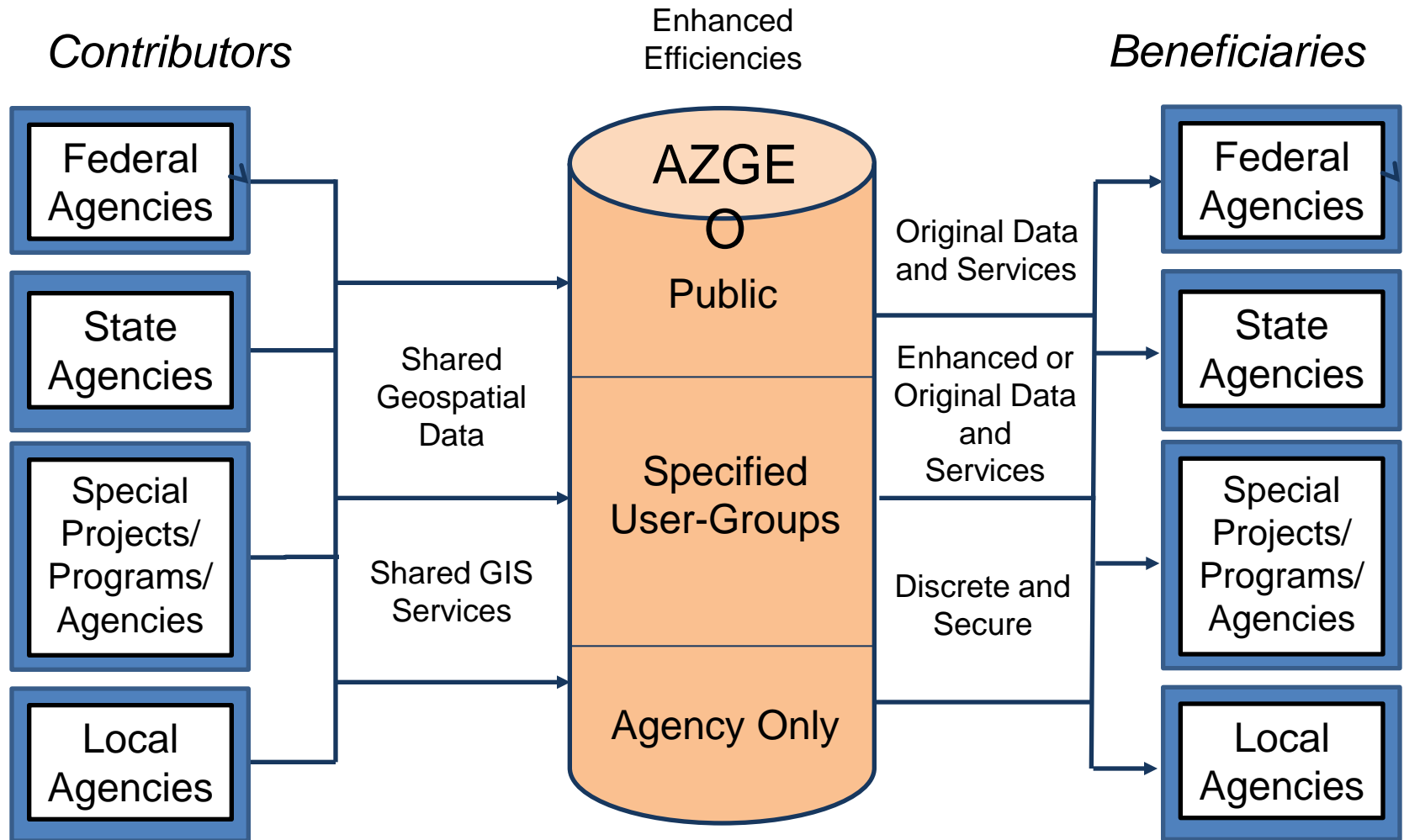
# Geospatial Data Sharing Platform



- Use AZGEO to upload and share datasets, documents, and map services
- Streamlined data distribution mechanism—share your data seamlessly with both internal and external users
- Secure and extensible data sharing platform
- Built on scalable application and database servers
- Data backed up redundantly to multiple servers and data appliances



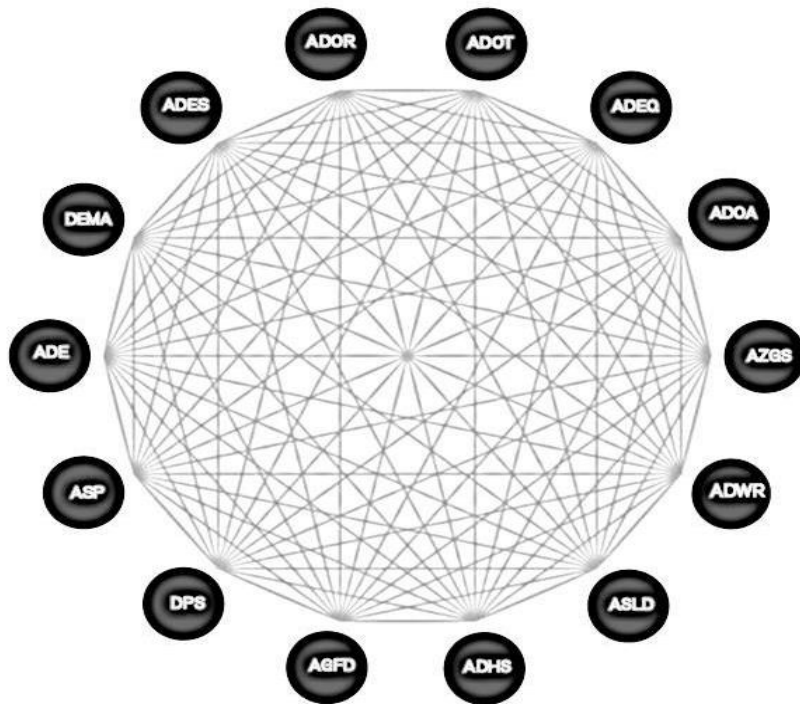
# Conceptual Model



# AZGEO Improves Data Sharing Efficiency



Current



Individual requests are required to share the same data between every agency

Proposed



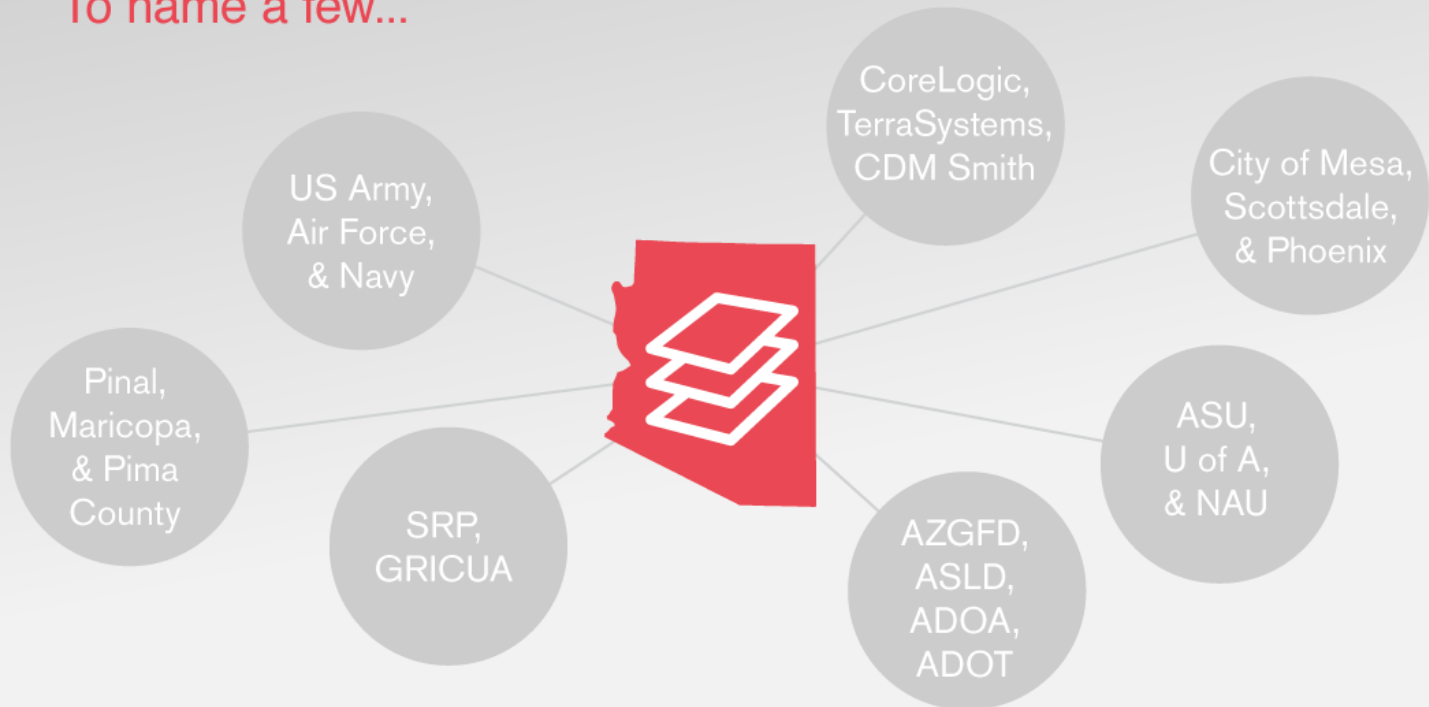
AZGEO promotes efficient data sharing

# Participating Agencies



## WHO USES AZGEO?

To name a few...



# Original Datasets and Geospatial Services



- AZGEO houses original datasets and content from a number of projects and programs, including:
  - AZ Broadband Project, Road Networks from E911, Map 21, etc.
- AZGEO contains a number of shared datasets contributed by various agencies
- Organizations also store secure, private datasets for internal dissemination to their users

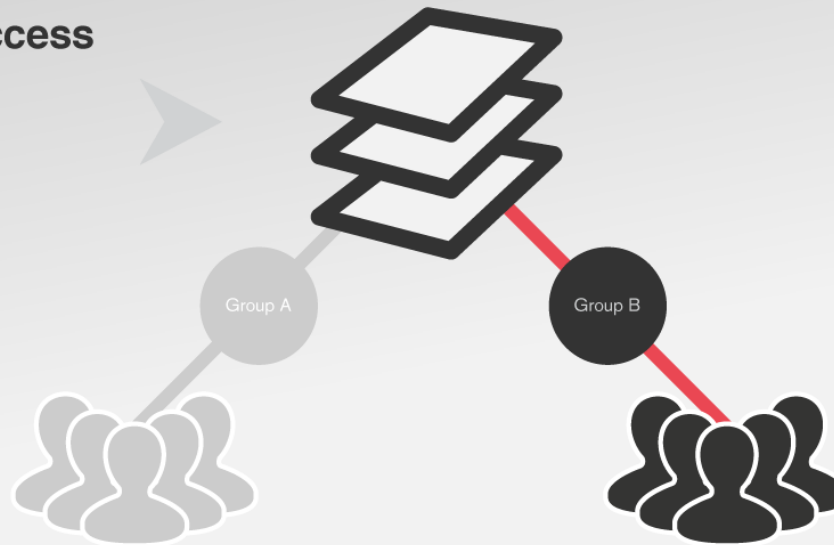
# Customizable Security



## CONTROL ACCESS TO YOUR DATA

Who can access  
this data?

Group A  
✓ Group B



- AZGEO Security is organic and expandable— you pick who gets access to your data

# Enhanced Access Control



- Data contributors can choose to share their data with their internal staff, external agencies, or (optionally) with the public
- Security user-groups are customizable
- Designated group administrators are responsible for approving users
- Can be highly secure and private; “invite only” restricted
- Can be “joinable” so that the group administrator does not have to manually add in their members

# AZGEO User-Groups



- AZGEO groups are for the security of the data contributor
- Groups are “members-only”
- There are 3 base groups
  - Everyone is automatically a member of the “General Public” group when they sign-up
  - Depending on the user’s email address, they may also be automatically added to the “Education” or “Government” group
- You must request to join any of the other groups of which you are a member

# How This Ensures Security for the Data Contributor:



General *	Data *	Status *	Access *	File
Data Access (choose one or more groups):				
<b>My Group(s)</b> <a href="#">Select All</a>				
<input type="checkbox"/> The General Public				
<input checked="" type="checkbox"/> Government				
Share data with groups you belong to.				
<b>Other Group(s)</b> <a href="#">Select All</a>				
<input type="checkbox"/> E-9-1-1 Public Safety				
<input type="checkbox"/> Education				
<input type="checkbox"/> ASU ISSR				
<input type="checkbox"/> La Paz County				
<input type="checkbox"/> Pinal County				
<input type="checkbox"/> Gila River Indian Community GIS				
<input type="checkbox"/> Yavapai County				
<input type="checkbox"/> Arizona Trails Association				
<input type="checkbox"/> Maricopa Association of Governments (MAG)				
<input type="checkbox"/> Arizona Department of Environmental Quality (ADEQ)				
<input type="checkbox"/> Arizona State Land Department (ASLD)				
<input type="checkbox"/> Maricopa Regional GIS Technical Council				
<input type="checkbox"/> Arizona Geological Survey (AZGS)				

- The “Access” tab, required when contributing datasets or services, gives the data contributor complete control over which groups have access to the dataset or service in the Catalog
- If a group is not selected, that group will not even be able to see that the dataset or service is on the Clearinghouse
  - E.g., I only want to share my Public Land Ownership dataset with Government users. Checking the box next to “Government” will ensure that only the “Government” group has access to my data.



# Search and Discovery for your Data



## STANDARDIZED METADATA

We made it simple and useful.

**All AZGEO data includes the following metadata:**

- Data Custodian
- Access and Use Constraints
- Data Abstract
- Data Purpose
- Keywords/Data tags
- Publication Date
- Spatial Extent
- Projection, Datum, Units
- Time period of data
- Project status
- Update frequency
- Next expected update

- AZGEO datasets use an optimized set of metadata for search and discovery
- AZGEO Catalog is used to filter and query data

# AZGEO Data Catalog



Catalog

Type:  Data Category:  Keywords:

Data Type	Geospatial Data ▲	Author Agency	Clip n' Ship	Data File
Dataset	50' Contour Lines - Apache County	Arizona State Land Department (ASLD)		apache50.zip
Dataset	50' Contour Lines - Cochise County	Arizona State Land Department (ASLD)		cochise50.zip
Dataset	50' Contour Lines - Coconino County	Arizona State Land Department (ASLD)		coconino50.zip
Dataset	50' Contour Lines - Gila County	Arizona State Land Department (ASLD)		gila50.zip

- Filter on type (data, service), data category or keywords (defined by the data contributor)
- Users only have access to datasets and services that have been exposed to the groups in which they belong

# What data formats can be shared on AZGEO?



- AZGEO accepts:
  - shapefiles (.shp)\*
  - layer package files (.lpk)
  - map package files (.mpk)
  - xml workspace documents
  - file geodatabases (fgdb)\*
  - data services
- Standalone metadata files can also be shared in xml format
- Files must be less than 600 MB to upload

\*Must compress first; AZGEO accepts these formats as .zip only

# AZGEO “Skinny” Metadata



[HOME](#) [ABOUT](#) [GROUPS](#) [CATALOG](#) [MAP](#) [CONTRIBUTE](#) [CONTACT](#) [HELP](#)

## Contribute

[View](#) [Edit](#)

### Dataset Requirements

If you are submitting a shape file and would like it exposed as a service, we ask that you *provide a layer file* so that your data will display correctly. You can contribute one shape file per .zip.

### Service Requirements

Please provide the REST endpoint for your web mapping service.

### Group Document Requirements

We support the following document and picture formats.  
.txt .pdf .doc .docx .xls .xlsx .ppt .pptx .pps .csv .xml .gif .png .jpg .bmp

### Required Metadata for Datasets and Services

Data Custodian (Name, Email, Phone)	Publication Date
Access and Use Constraints	Time period of data
Data Abstract	Project status
Data Purpose	Update frequency
Keywords/Data tags	Next expected update
Spatial Extent	

#### Add a Dataset

[Add Dataset](#)

#### Add a Service

[Add Service](#)

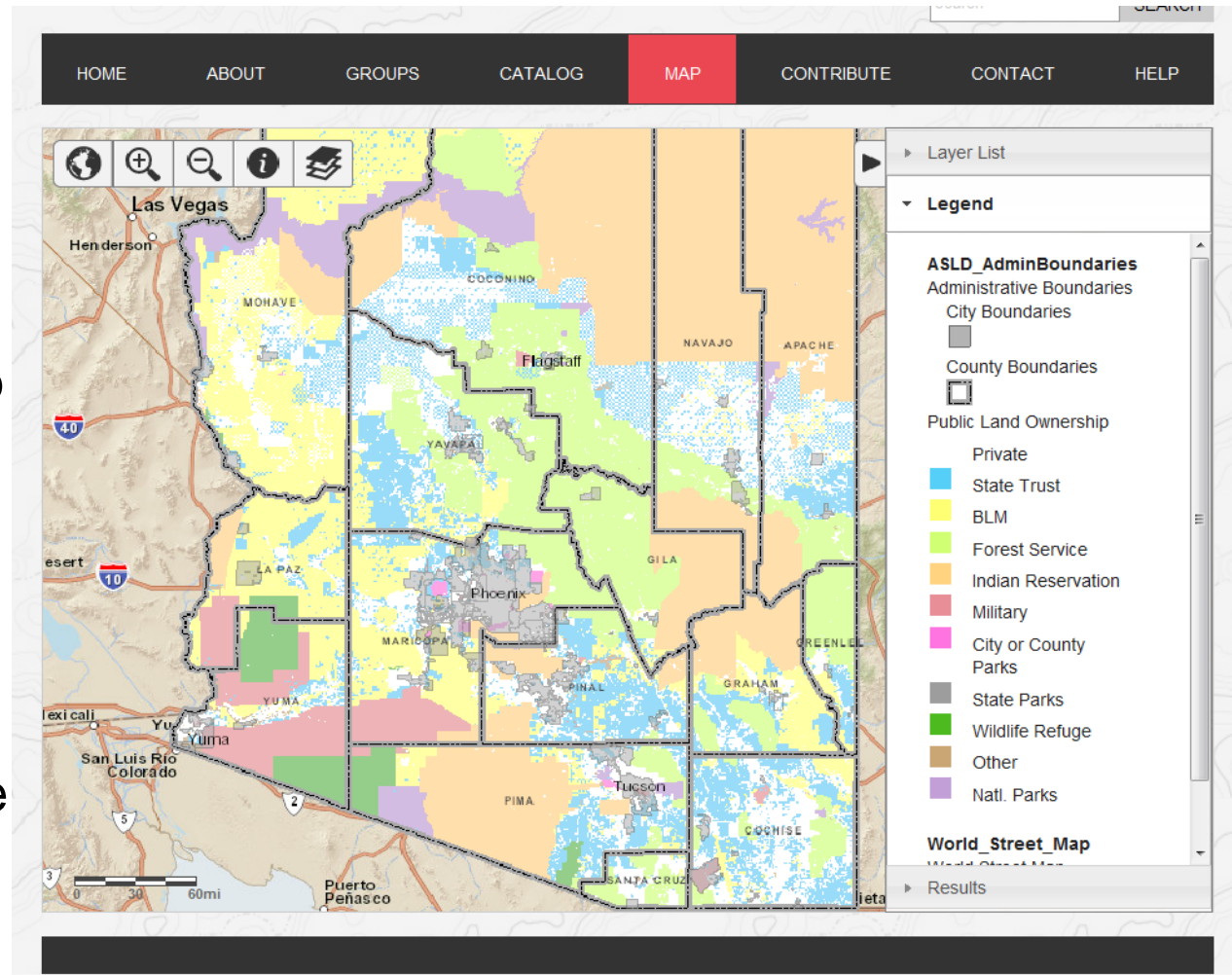
#### Add a Group Document

[Add Group Document](#)

# AZGEO Map Viewer



- AZGEO features a web-based interactive map viewer that allows users to display data and, if authorized, to 'clip n ship' (extract and download data using user defined boundaries).
- Upcoming feature: an opacity tool will be added to each service



# Analytics & Statistics



- AZGEO Analytics track how often your data has been downloaded and by whom
- Gives you a comprehensive picture of how your data is being used by both internal users and other organizations
- Analytics and reports can be used as a tool to increase ROI on your data

# Analytics & Statistics

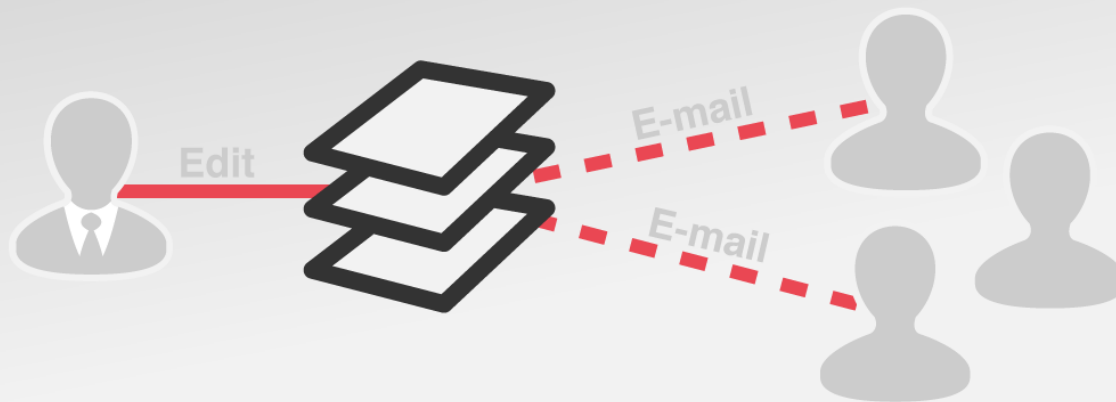


- 3 different types of statistics:
  - “My Data/Services Statistics” tracks views
  - “My ClipNShip Statistics” tracks map viewer extracts
  - “My .ZIP Download Statistics” tracks the number of times your data has been successfully downloaded
- The statistics capture when the data was viewed or downloaded, by whom, and the user’s email address

# Data Subscriptions and Notifications



**SUBSCRIBE TO DATA AND GET NOTIFIED WHEN ITS UPDATED!**



- AZGEO tracks changes to your data
- Authorized users can subscribe to your data
- Subscribed users will receive automatic email notifications



# Subscribing to Data & Viewing Your Subscriptions



## City Boundaries



Submitted by **brynn** on Wed, 04/09/2014 - 12:39pm

General	Data	Status	Access	File
<b>Custodian Name:</b> ASLD				
<b>Custodian Email:</b> <a href="mailto:bbruno@azland.gov">bbruno@azland.gov</a>				
<b>Custodian Phone Number:</b> 5202094265				
<b>Custodian Organization Type:</b> State				

### Dataset Disclaimer:

Access is granted to public agencies, educational institutions, non-profit organ For commercial use of the data see Arizona Revised Statutes 39-121.03. The or expressed, with respect to the accuracy of and the use of this data for any : assessment of the data for any specific use.

Does the Disclaimer need to be displayed each time the dataset is vie

No

Subscribe

A screenshot of the AZGEO CLEARINGHOUSE user interface. The top navigation bar includes links for HOME, ABOUT, GROUPS, CATALOG, MAP, CONTRIBUTE, CONTACT, and HELP. A search bar is located on the right. The main content area is divided into two columns. The left column, titled 'Data Contributor Menu', lists options: Add Dataset, Add Service, Add Group Document, My Datasets/Services Statistics, My ClipNShip Statistics, and My ZIP Download Statistics. Below this is a 'Join a Group' section with a description and a link to 'The group's owner must approve you before you become a member. You will be notified via email when you are approved.' The right column, titled 'bbruno', shows a user profile with a gray silhouette icon. It includes tabs for View, Edit, My Subscriptions (highlighted with a red arrow), and My Data. The profile information includes: First Name: Brynn, Last Name: Bruno, My Agency: General Public, My Group(s): The General Public Government, and I Agree To. At the bottom, there is a paragraph of text about the Arizona State Land Department and the Arizona Geographic Information Council (AGIC).

# Get Involved!



- Sign-up for an account:
  - <https://azgeo.az.gov/azgeo/user/register>
- Think about contributing your own data to this expanding GIS clearinghouse.
- Contact us:
  - [agicportal@azland.gov](mailto:agicportal@azland.gov)



**AZGEO**  
**CLEARINGHOUSE**

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